

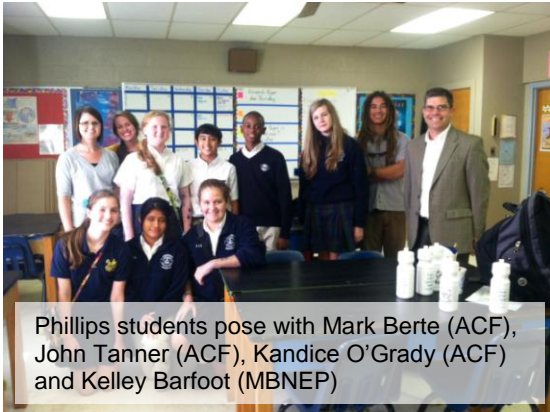
2012-2013 Mobile Bay Estuary Corps Final Report
Prepared by the Alabama Coastal Foundation
May 30, 2013

By all accounts and measures, the pilot year of the Mobile Bay Estuary Corps program for middle school students was a tremendous success. During the 2012-2013 academic calendar, the Mobile Bay National Estuary Program (MBNEP), Alabama Coastal Foundation (ACF) and Dauphin Island Sea Lab (DISL) partnered to bring the Mobile Bay Estuary Corps concept into reality. The purpose of the program was to promote the wise stewardship of water quality and living resources of Alabama's estuaries through education, volunteer experiences, and career path guidance. Feedback from teachers, students and parents has been overwhelmingly positive and requests have been made to conduct it a second year.

The schedule for this after-school enrichment program engaged teachers and students in hands-on learning experiences that encouraged stewardship. The program also created opportunities for interested middle school students to interact with and receive guidance from professionals. Furthermore, the program had support from both the principals and superintendents of the participating schools.

Spanish Fort Middle School and Phillips Preparatory School were selected to pilot the program. Each school was asked to invite ten students to participate and both schools chose their students in different ways. The Spanish Fort students were selected by their teacher because of a student's interests in science and his or her grade in that subject. The Phillips Preparatory students used the application and selection process and were selected by teachers and the principal. As you can see from the attached schedule, the ACF contacted professionals from several different biological fields to lead the educational session with the students. The following month, an additional professional

guided the students with a volunteer project to show the students the application of what they had learned in the previous month.



Phillips students pose with Mark Berte (ACF), John Tanner (ACF), Kandice O'Grady (ACF) and Kelley Barfoot (MBNEP)

The program began in September to allow for students to acclimate to their school and find out about the program. The first session was “Orientation and Watersheds 101”. The Alabama Coastal Foundation provided an overview of the Estuary Corps program and the Mobile Bay National Estuary Program (MBNEP)

conducted a Watersheds 101 presentation.

In the introductory session the students covered vocabulary such as, ‘estuary,’ and ‘watershed,’ ‘non-point source pollution’ and ‘storm water runoff’. Students were asked to identify the watershed in which they live and the source of their drinking water. In addition, the students gained an overview of the environmental challenges facing our coastal environment including storm water and point and non-point source pollution and the environmental damages that result. Each student was asked to say what they would like to do in terms of a career.

During the October session, Scott Brown from the Alabama Department of Environmental Management (ADEM) gave a presentation on ADEM’s role in monitoring our State’s waters and what they look for when water is tested. The presenter discussed the different measures of water quality including but not limited to salinity, turbidity and pH with the students. The students were taught more extensively about non-point source pollution and the effects it has on our watershed.

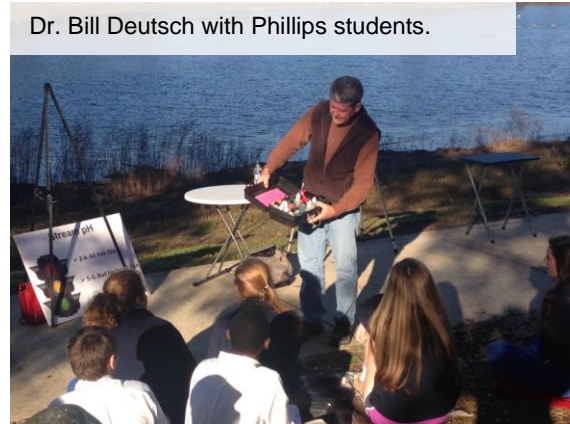
The November session was “Student Involvement Project 1: Water Testing”. This was the first of the hands-on sessions. Students were worked with a representative from Alabama Water Watch to put into practice what they learned in October’s session. Guided by Jeff Nye of the University of South Alabama



Spanish Fort Students performing water test with Jeff Nye.

Spanish Fort students tested samples from a nearby water source in their watershed. Phillips Preparatory students were lead by Dr. Bill Deutsch of Alabama Water Watch. Students expressed interest during the fieldwork and the of the year evaluation proved

that it was a lasting experience. Students expressed how they enjoyed the hands-on experience. They did give constructive criticism regarding the communication of how to be best prepared for field trips. It should be stressed to students to dress appropriately for the trip, some students got cold in the weather.



Dr. Bill Deutsch with Phillips students.

There was no session in the month of December due to the holiday break.

In the evaluation this was seen as positive planning by both the parents and teachers present. The January session was called “Education Issue 2: Runoff”. Students watched *Red Fish Tale*, an MBNEP video production that discusses excess nutrient deposits in water bodies. This video was used to reinforce the concepts of pollution runoff and how it is delivered to streams and degrades water quality. Students then discussed the environmental effects of storm water in their local watershed.

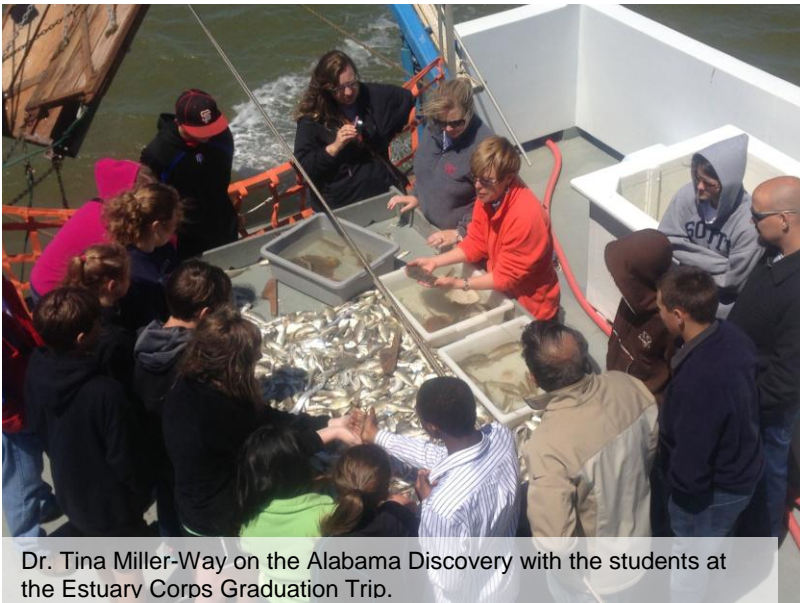
The follow up February session was “Student Involvement Project 2: Rain Barrel Construction and Recycling Collection.” During this session, students participated in an on-campus workshop with MBNEP’s Christian Miller to construct rain barrels that were to be used and installed on their school campus and/or raffled as a PTA fundraiser. Both students and teachers spoke about how fun and interesting this lesson was and both schools are using their rain barrels on campus to recycle water for their plants and gardens. In addition to the concept of recycling/re-using water, students were to coordinate a recycling demonstration project for the community to show how easy it is to put that concept into practice. While this was a well intended idea, there was not enough time to both construct rain barrels and conduct a recycling project. This session should be evaluated and revised next year.

The final at-school session of Estuary Corps occurred in March. This session was both educational and involved the students in a hand’s on project. “Student Involvement Project 3: Trash Clean Up and Tree Planting” was led by Gena Todia, a local environmental consultant. The students collected trash surrounding the school and then planted trees and other native vegetation at their respective schools.

Due to spring breaks and academic testing, the Estuary Corps program did not meet in April. On May 4th, 2013, Estuary Corps held its final field trip and Graduation Ceremony which were conducted jointly at the Dauphin Island Sea Lab. The day began with the Spanish Fort and Phillips Preparatory students and chaperones arriving at the Dauphin Island Sea Lab at 8 AM. The students, parents, and teachers met with Mark Berte (ACF), John Tanner (ACF), Tina Miller-Way (DISL), and Kelley Barfoot (MBNEP) at the Shelby Center to meet each other for the first time.

Mark Berte welcomed the parents to the Estuary Corps program and provided the schedules for the day’s events. Everyone was then prompted to answer a few

questions regarding the Estuary Corps program. (See responses below.) After feedback was provided, the students went on the Alabama Discovery, a 65' vessel used by the DISL for research purposes. Aboard the vessel, the students sat in the cabin while the boat headed offshore and Dr. Miller-Way taught a lesson on the history and characteristics of Mobile Bay and the Mobile Bay Watershed. When the lesson ended, the students were led onto the stern of the boat and shown the seine and shrimp nets. The seine and nets were dropped and dragged for 15-20 minutes before being pulled in and sorted for an educational lesson. During the lesson, the students learned the common names of several species of fish and aquatic organisms, how the net only catches fish and not sea turtles, and some of the internal anatomy of a white trout during a dissection.



Dr. Tina Miller-Way on the Alabama Discovery with the students at the Estuary Corps Graduation Trip.

While the boat trip was a wonderful success with the students, teachers and parents, there was a small mishap before the trip began. DISL requires specific permission forms for the students to board the vessel. Even

though these forms were sent to the teachers on January 21, the students had school issued permission forms and not the DISL required forms. Due to the adaptive management skills of the partners, every student was able to obtain a parental signature on the forms. This and other lessons learned from this program are provided below.

Estuary Corps Student, Teacher, and Parent Evaluations from May 4:

General

- The Estuary Corps program was overall good, but scheduling was a bit difficult and having sessions midweek was sometimes hard to handle.
- Students would like more interactive materials
- The water-testing trip went past time and gave the students less time for homework (time management). When making trip students need to dress appropriately.

Sessions

- The students liked the hands on lessons the most, the one mentioned were the model watershed, water testing, and the rain barrel construction.
- It was redundant to show “A Redfish Tale” because it was used by teachers earlier in the year.
- Students said there was too much paper with the ADEM activities.

Timing

- Students think that right after school is the best time.

Joining Sessions

- The students would like more hands on projects and service learning opportunities.
- Schools would like to try and do service together in groups. Need to factor in travel costs.

Career

- Rohan Badve used a marine biology based science project for school: stewardship – watershed.
- Several students were more interested in protecting our estuary and volunteering their time to that end.

Recruitment

- Students said many other students did not know about the program and the paper work they had to fill out in order to be selected they were not given much time to complete.
- The students also think that if more students were to be selected then it would be better and more fun.

Lessons Learned:

- Ask both schools to use the materials developed this year to invite and then select 2013-2014 participants. Ask students to help with recruitment and do this as soon as funding has been approved!
- Expand the Estuary Corps classes to allow more students to participate. The ideal size is between 15-20 students at each school.
- Encourage presentors to provide more hands-on learning experiences for students.
- Need to develop both pre- and post- evaluation tools for the program to track what the students learn and do differently in terms of career choices throughout the program.
- Design a t-shirt for the 2013-2014 Estuary Corps graduates.
- Ensure that all boat waivers are signed two months prior to arriving at the Sea Lab for the Alabama Discovery voyage.

Conclusions:

The Mobile Bay Estuary Corps program's pilot year was so successful that both schools have requested to participate again next year. There were lessons learned throughout the program that will make next year's effort more efficient and more impactful to the students. To that end, the Alabama Coastal Foundation is asking for \$10,000 for the 2013-2014 Estuary Corps Program and hope that the Sea Lab will continue receiving \$5,000 for their portion of the effort as well.